TOWN OF WEBSTER MUNICIPAL VULNERABILITY PREPAREDNESS PLANNING

Listening Session

May 23, 2022

MVP
Municipal Vulnerability Preparedness

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WELCOME

Webster was awarded a $22K grant for Municipal Vulnerability (MVP) Community Resilience Building (CRB) Workshop Process

First step in unlocking additional funding opportunities for Webster from FEMA/MEMA and Commonwealth of Massachusetts

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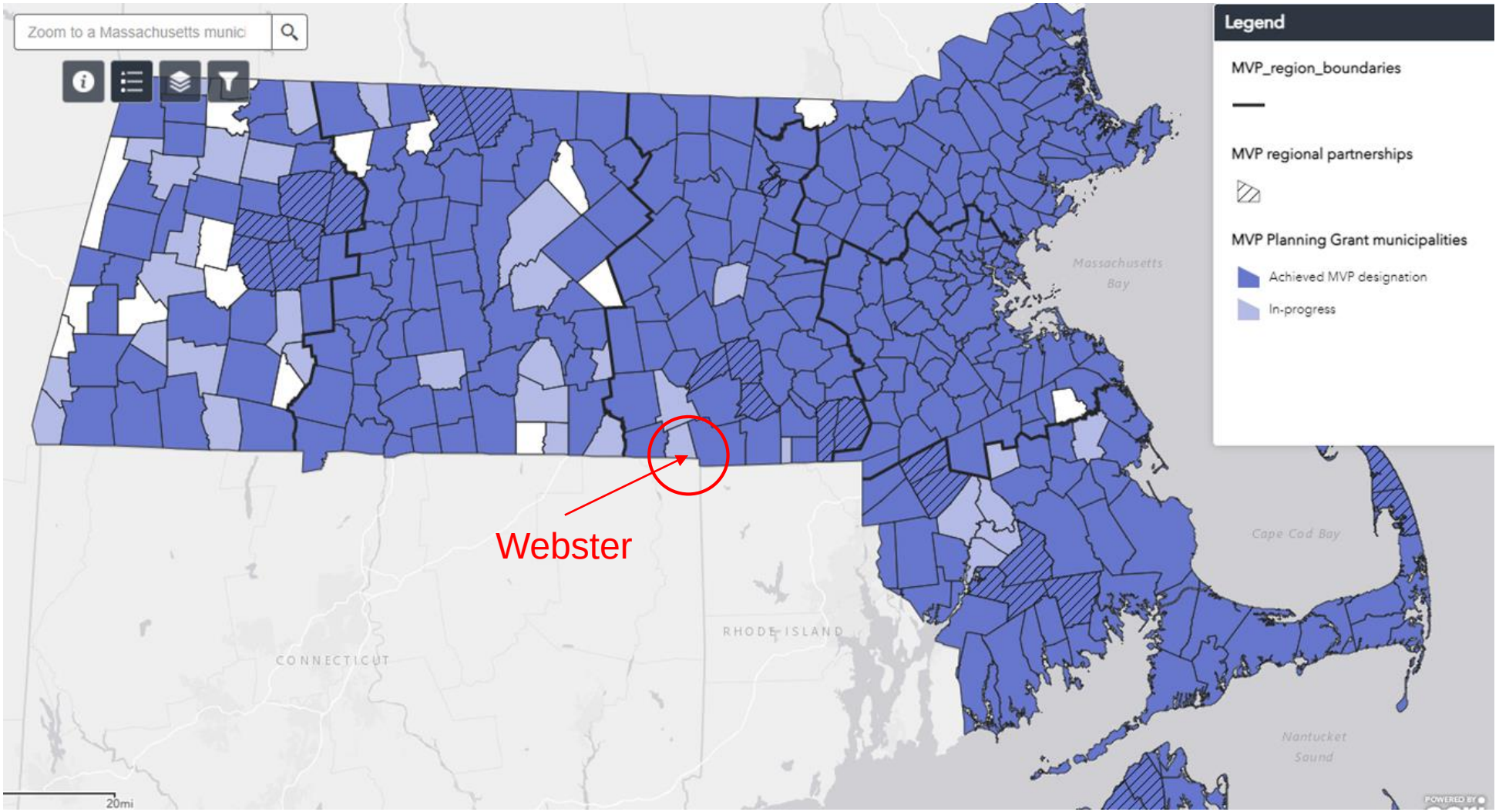
BACKGROUND ON MVP PROGRAM



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MVP GRANT AND CRB PROCESS

1. Establish Core Team
2. Complete Evaluation/Assessment
3. Hold Workshops
4. Draft MVP Report
5. **Hold Listening Session**
6. Final MVP Report

A BIG thanks to Webster MVP Core Team

Richard LaFond

Courtney Friedland

Carol Cyr

Ann Morgan

Tom Cutler

Kenny Pizzetti

Brian Hickey

Jean Travis

Hillary King

NATURAL HAZARDS AND CLIMATE CHANGE

WHAT ARE NATURAL HAZARDS?

Poor Urban Drainage
Regional Flooding
Culvert Failure

Inland Flooding

Tsunami

Severe Winter Storm

Blizzards
Snow
Ice Storms

Drought

Average/Extreme Temperatures

Tornadoes

Landslide

Wildfires

Other Severe Weather

Nor'easters
High Wind
Heavy Precipitation
Microbursts

Coastal Flooding

Invasive Species

Earthquake

Coastal Erosion

Hurricanes/Tropical Storms

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TOP NATURAL HAZARDS – PAST & PRESENT

Flooding - Heavy Rain & Culvert Failure

Extreme Temperatures & Drought

Other Severe Weather - High Wind, Hurricanes, Nor’easters, Thunderstorm Wind

Severe Winter Storms- Nor’easter, Blizzards, Heavy Snow & Ice Storms

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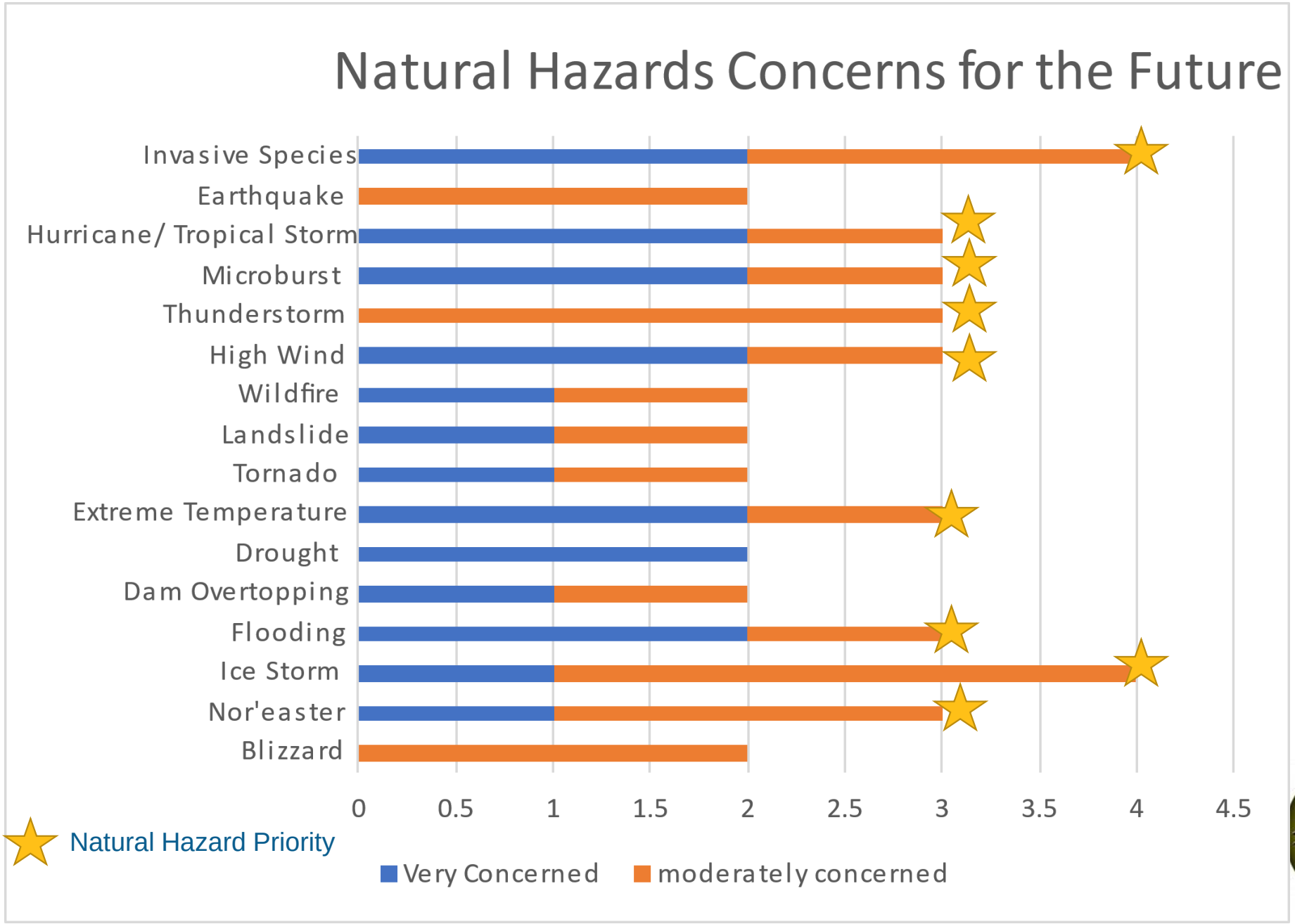
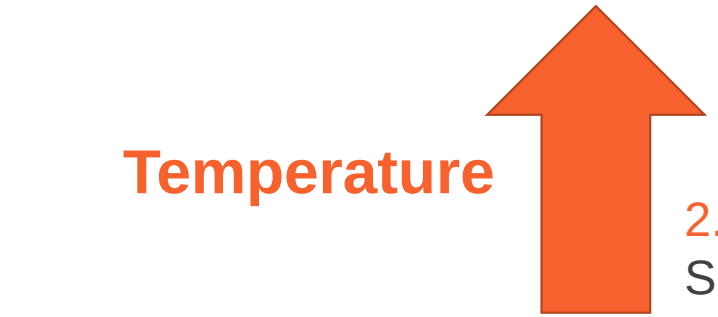
TOP NATURAL HAZARDS – FUTURE



MASSACHUSETTS OBSERVED CLIMATE CHANGES



Temperature

2.9ºF
Since 1985 (Statewide)

Growing Season

15 Days
Since 1950

Sea Level Rise

11 inches
Since 1922 (Boston)

Heavy Precipitation

55%
Since 1958

resilientma.org

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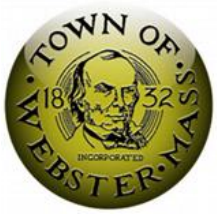
CHANGES IN PRECIPITATION

Climate Indicator		Observed Value 1971-2000 Average	Mid-Century Projected Change in 2050s	End of Century Projected Change in 2090s
Days with Precipitation > 1"	Annual	7 days	Increase by 10-42% 8-10 more days per year	Increase by 15-55% 8-11 more days per year
	Winter	2 days	Increase by 10-69% 2-3 more days per year	Increase by 25-109% 2-3 more days per year
	Spring	2 days	Increase by 2-46% 2 more days per year	Increase by 11-82% 2-3 more days per year
Total Precipitation	Annual	47 inches	Increase by 2-13% Increase of 1 - 6 inches	Increase by 3-16% Increase of 1.2 - 7.3 inches
	Winter	11.2 inches	Increase by 1-21% Increase of 0.1 - 2.4 inches	Increase by 4-35% Increase of 0.4 - 3.9 inches
Consecutive Dry Days	Summer	12 days	Variable (-1 - +2 days)	Variable (-1 - +3 days)
	Fall	12 days	Increase by 0 - 3 days	Increase by 0 - 3 days

IMPACTS:

- **Episodic droughts**
- **Concerns over food production and drinking water supply**
- **Stress on ecosystems**
- **Flooding**



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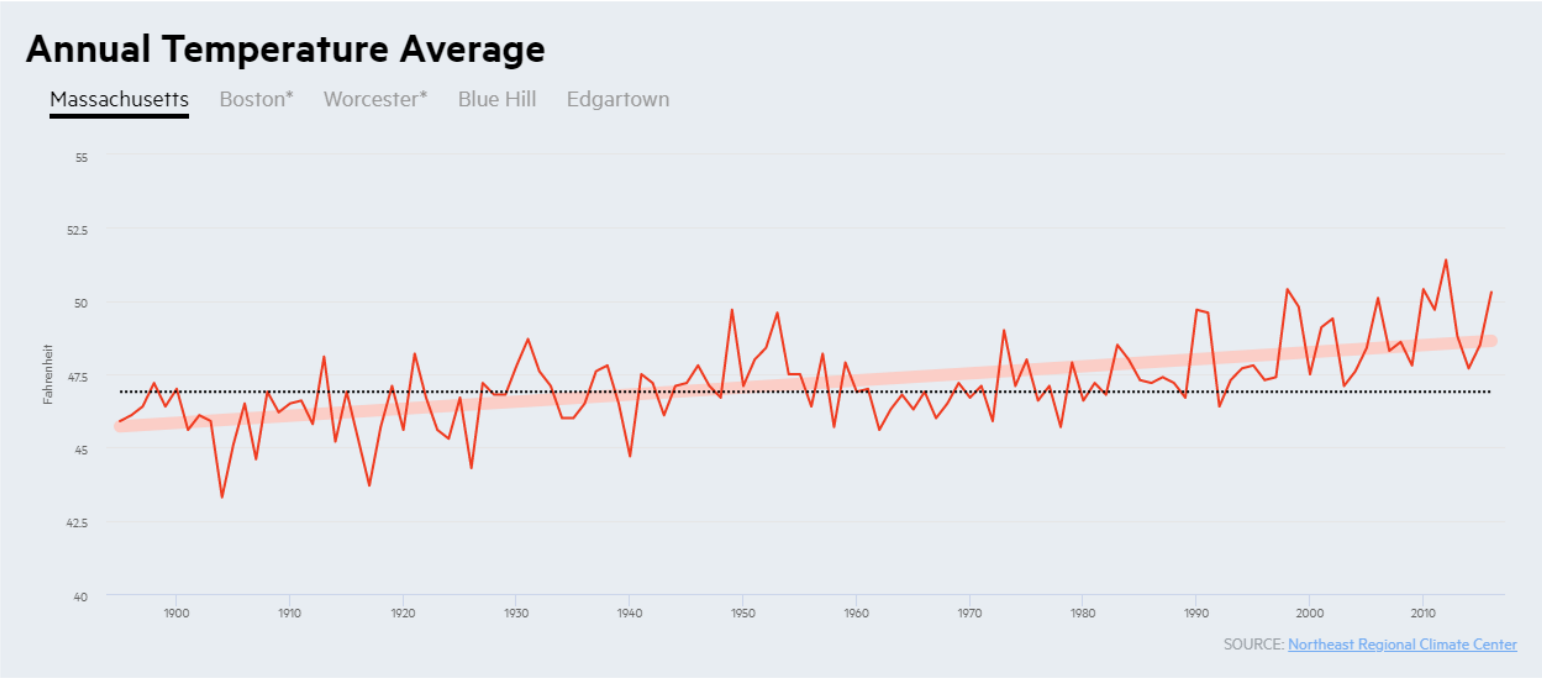
RISING TEMPERATURE



IMPACTS:

- Heat-related illnesses
- Vector borne-diseases
- Health of plants, animals, ecosystems
- Reduced crop production
- Larger energy demand
- Droughts and wildfires

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EXTREME STORMS

Blizzards

- More than 6 in MA since 2011
- Blizzard of 2022

Nor'easters, Hurricanes and Tornados

- Upward trend since the 1970s

IMPACTS:

- **Public safety concerns, including increased injuries and mortality**
- **Economic damages and business disruption**
- **Property and infrastructure damage**
- **Impacts on natural resources**

CLIMATE CHANGES	RELATED NATURAL HAZARDS	PROJECTIONS BY THE END OF THIS CENTURY
Changes in precipitation 	– Inland flooding – Drought – Landslide	– Annual precipitation: Increase up to 16% (+7.3 inches) – Days with rainfall accumulation 1+ inch: Increase up to 57% (+4 days) – Consecutive dry days: Increase 18% (+3 days) – Summer precipitation: Decrease
Sea level rise 	– Coastal flooding – Coastal erosion – Tsunami	– Sea level: Increase 4.0 to 10.5 feet along the Massachusetts coast
Rising temperatures 	– Average/extreme temperatures – Wildfires – Invasive species	– Average annual temperature: Increase up to 23% (+10.8 degrees Fahrenheit) – Days/year with daily minimum temperatures below freezing: Decrease up to 42% (-62 days) – Winter temperatures: Increase at a greater rate than spring, summer, or fall – Long-term average minimum winter temperature: Increase up to 66% (+11.4 degrees Fahrenheit) – Days/year with daily maximum temperatures over 90 degrees Fahrenheit: Increase by up to 1,280% (+64 days) – Growing degree days: Increase by 23% to 52%
Extreme weather 	– Hurricanes/tropical storms – Severe winter storms/nor'easters – Tornadoes – Other severe weather	– Frequency and magnitude: Increase

Note: This plan also assesses earthquakes, but there is no established correlation between climate change and earthquakes.
Source of Climate Change Projections: Northeast Climate Adaptation Science Center at the University of Massachusetts, Amherst.

CLIMATE CHANGE + NATURAL HAZARDS = AMPLIFIED RISK

https://www.mass.gov/service-details/massachusetts-integrated-state-hazard-mitigation-and-climate-adaptation-plan

COMMUNITY ASSET INVENTORY

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WHAT ARE COMMUNITY ASSETS?

Societal

Infrastructure

Natural Resources

Economy

WHAT ARE COMMUNITY ASSETS?

Built Environment: Critical facilities necessary for a community's response to and recovery from emergencies, infrastructure critical for public health and safety, economic viability, or for critical facilities to operate.

Economy: Major employers, primary economic sectors and commercial centers where loss or inoperability would have severe impact on the community and ability to recover from a disaster.

People: Areas of greater population density, or population with unique vulnerabilities or less able to respond and recover during a disaster.

Natural Environment: Areas that provide protective function to reduce magnitude of hazard impact and increase resiliency. Areas of sensitive habitat that are vulnerable to hazard events, protection of areas that are important to community objectives, such as the protection of sensitive habitat, provide socio-economic benefits, etc.

PEOPLE – SOCIETAL ASSETS

- **Public Education Facilities and Resources**
- **Buildings that Support Community Needs**
- **Vulnerable Populations**
- **Senior Support Services**

INFRASTRUCTURAL ASSETS

- Public Water Supply
- Wastewater Treatment
- Municipal Buildings
- Transportation Corridors & Drainage
- Culverts, Bridges & Dams

ECONOMIC ASSETS

- **Essential Goods – Food, Pharmacy, Hardware & Fuel**
- **Large Employers**
- **Town of Webster**
- **Tri-Valley Services to Webster**

ENVIRONMENTAL ASSETS

- **Wetlands and Waterbodies Resources**
- **Open Space and Conservation Lands**
- **Parks and Recreation Areas**
- **Forestry**

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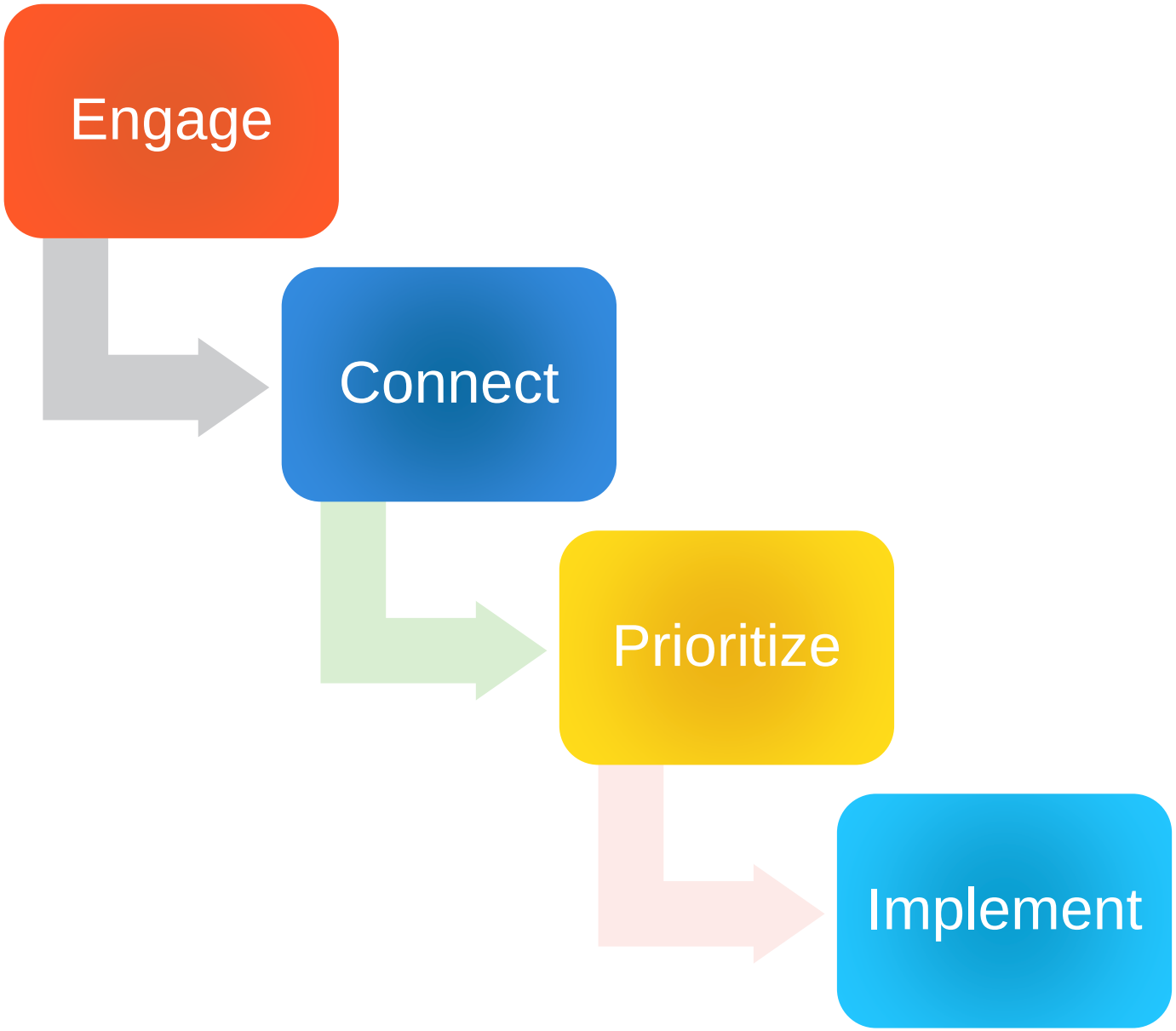
MVP WORKSHOPS

April 13th and 14th, 2022

WORKSHOP OBJECTIVES



CRB MATRIX

Community Resilience Building Risk Matrix www.CommunityResilienceBuilding.org

H-**M**-**L** priority for action over the **S**hort or **L**ong term (and **O**ngoing)
V = Vulnerability **S** = Strength

Webster's Priority Assets				Actions to Address Webster's Top Hazards			
Name	Location	Ownership (Town, State, Federal, Private)	Vulnerability (V) or Strength (S)	Severe Winter Storm Severe Weather - (Wind Related) Floods- Poor Urban Drainage, Culvert Failure and 100-year Flood Events Extreme Temperatures & Drought	Priority H - M - L	Time S Short L Long O Ongoing	Time Workshop Combined Scores
INFRASTRUCTURAL ASSETS							
Public Water Supply							
Water Treatment Facility	Memorial Beach Dr.	Town	S - New facility V - tree hazard	Identify opportunities to develop/assess redundances, update practices to reflect new changing regulations, implement education/outreach	H		11
Pump Station	Bigelow St.	Town	S		H		
Wastewater Treatment							
Waste Water Treatment Plant	38 Hill Street	Town		Identify opportunities to develop/assess redundances, update practices to reflect new changing regulations, implement education/outreach	H		10
Waste Water Collection System	Througout Town	Town		Evaluate flood risk areas along French River, identify and prioritize, implement stormwater controls, identify Town responsibilities and delegate tasks	H		
Municipal Buildings							
Town Hall	350 Main St	Town	S - Provides services V - basement flooding/leaking roof, can't open windows, been under rehab for several years, flooding, leaking, Groundwater induced flooding, susceptible servers, equipment in basement	Flood management and investigations	H	S	
Police/ Emergency Operations Center	357 Main St	Town	S - emergency services V - in flood plain	Investigate drainage improvements	H	O	
Fire station	55 Thompson Rd.	Town	S - centrally located V- basement floods	Drainage improvements in parking lot, set-up secondary communications center in addition to police station (feedback from Day 2 indicates that there likely is no space to do this in the fire station)	H		7
DPW/Highway	28 Cudworth Rd	Town	S - emergency response, debris control, risk management		L		
Transportation Corridors and Drainage							
Route 395		State	S - evacuation route				
Upper Gore, Lower Gore, Rawson Rd Intersection (with Rt 16)		Town	V - dangerous intersection, high grades and poor sightlines, part of evacuation route	Investigate roadway improvement/redesign	M	O	2
Emergency Roadways		Town		Investigate drainage improvements, mark evacuation routes	L	L	
Roadways around lake	Union Pt, Birch Island, Etc	Town/Private	V - evacuation difficulties, poor road conditions	Roadway and drainage improvements	L	O	

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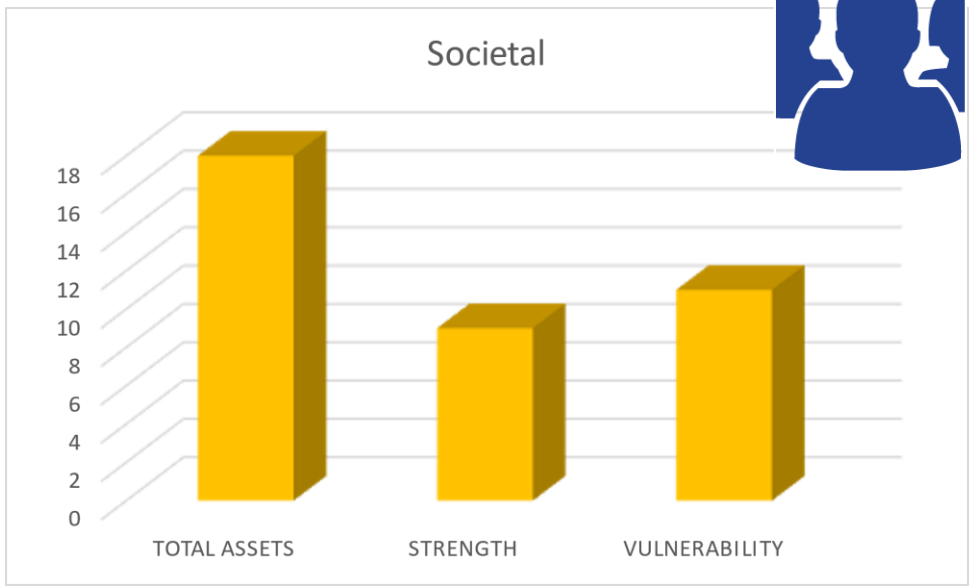
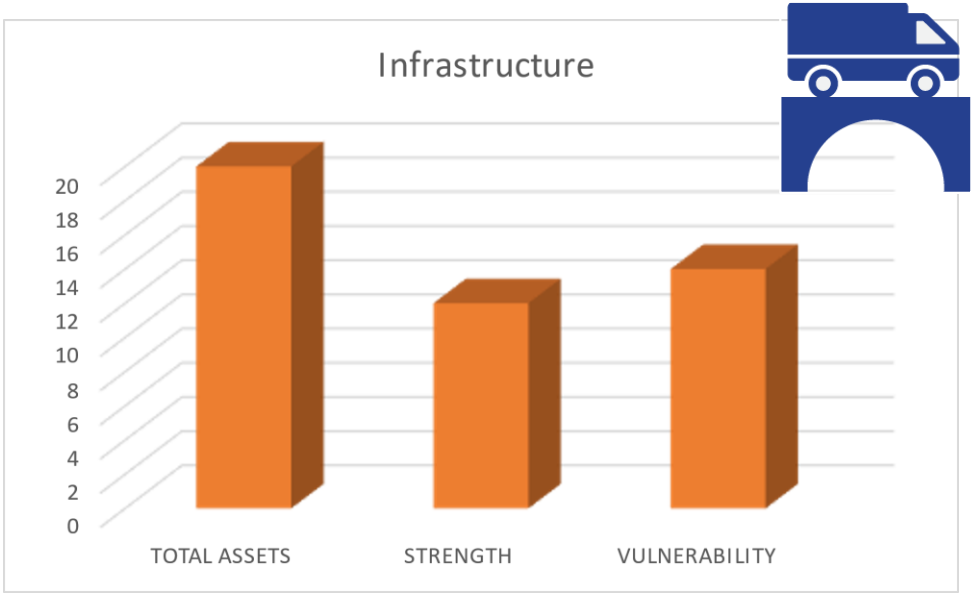
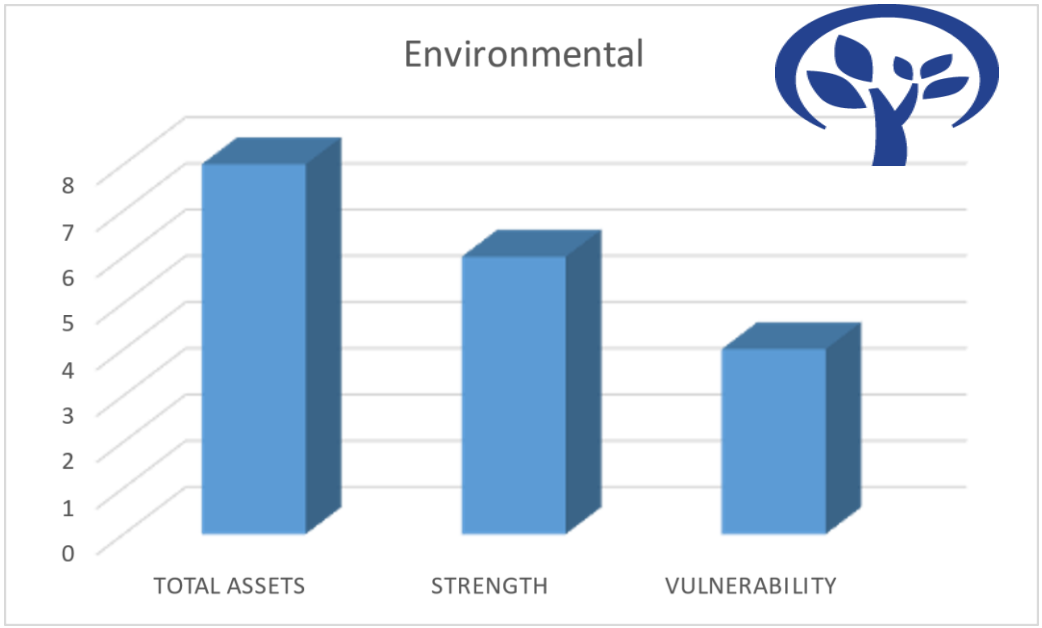
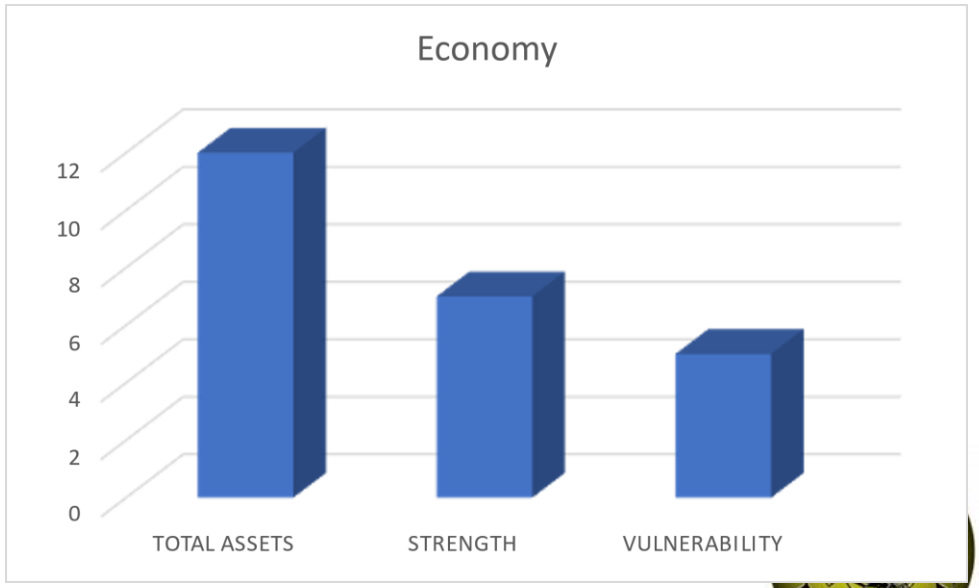
IDENTIFIED STRENGTHS AND VULNERABILITIES









MITIGATION STRATEGIES

TYPES OF MITIGATION ACTIONS

- Prevention
- Property Protection
- Public Education and Awareness
- Natural Resource Protection and Green Infrastructure
- Structural Projects
- Emergency Services Protection

EXAMPLE MITIGATION ACTIONS IN WEBSTER

- **Prevention**
  - Identify opportunities to develop/assess redundances, update practices to reflect new changing regulations for Water and Wastewater facilities
  - Collaborate with Harrington Hubbard Hospital for emergency preparedness
- **Public Education and Awareness**
  - Increase public outreach on use of Senior Center as emergency shelter and available emergency Services
  - Provide education on CodeRed system
  - Community wide evacuation planning & education
- **Natural Resource Protection**
  - Implement a tree inventory and management program to identify tree health
  - Evaluate beaver control strategies to mitigate flooding and co-exist with beavers
  - Prioritize acquisition of open space to Webster Lake tributaries
- **Structural Projects**
  - Assessment of mill bridges structural integrity
  - Drainage improvements to Fire Station parking area, consider Green Solutions
  - Roadway improvements for Upper and Lower Gore Road at Rawson Road

Full list available in draft MVP Report

WHAT'S NEXT?

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NEXT STEPS BEFORE JUNE 30, 2022

- **DRAFT** MVP Summary of Findings Report online for public review
- Submit comments to Ann Morgan by **June 30th**
- **Final** MVP Summary of Findings Report
- Submit documents to EEA

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MVP ACTION GRANT OPPORTUNITIES

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MVP ACTION GRANTS

- Detailed Vulnerability and Risk Assessment*
- Community Outreach and Education
- Local Bylaws, Ordinances, Plans, and Other Management Measures**
- Redesigns and Retrofits***
- Nature-Based Flood Protection, Drought Mitigation, Water Quality, and Water Infiltration Techniques
- Nature-Based, Infrastructure and Technology Solutions to Reduce Vulnerability to Extreme Heat and Poor Air Quality

* Most common project type

** Second-most common project type

***Third-most common project type

FY23: Maximum grant funding increased to $3M for individual projects
Regional projects capped at $5M

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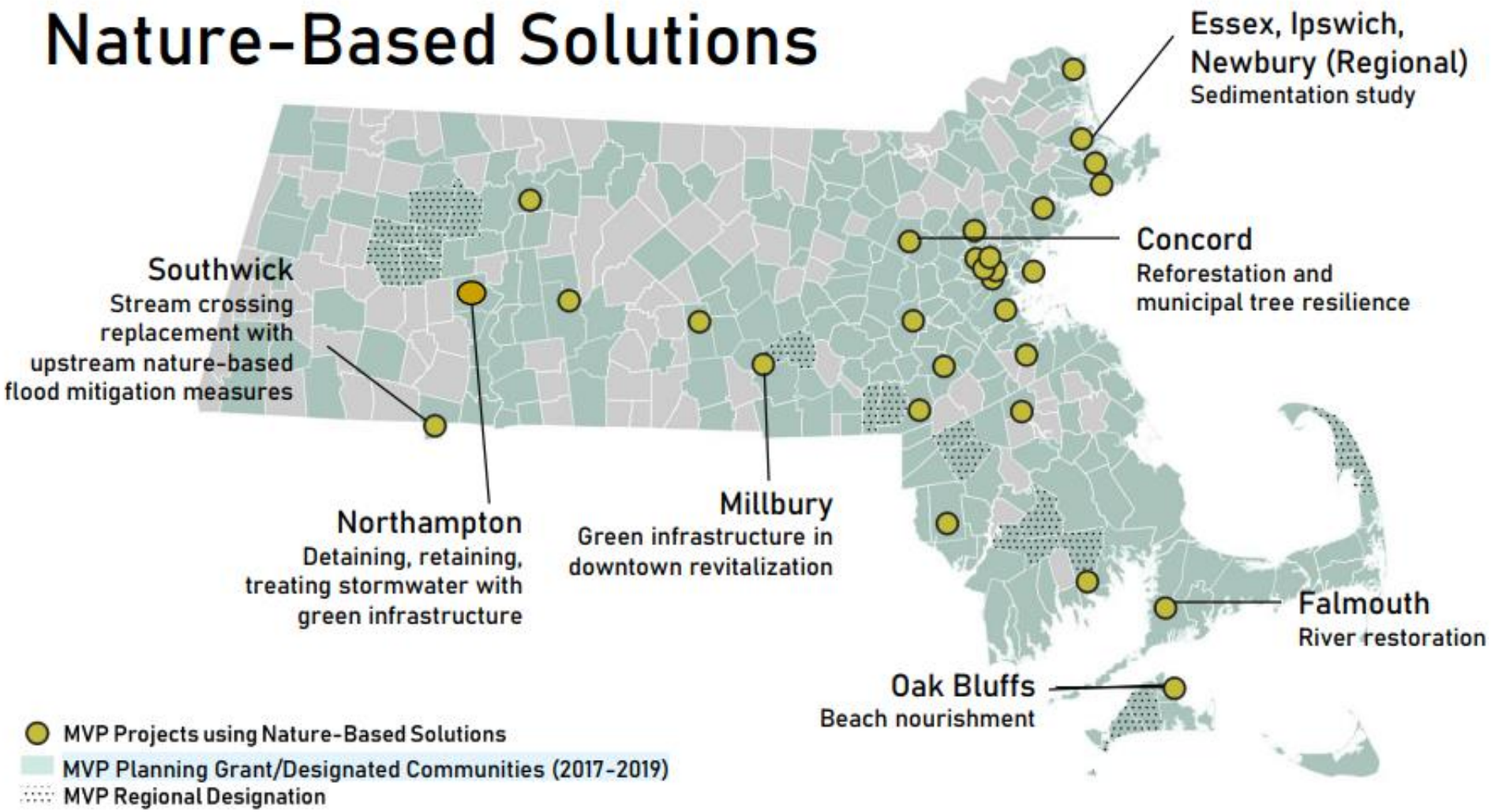
Nature-Based Solutions



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FOR MORE INFORMATION

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AND NOW FOR QUESTIONS AND ANSWERS